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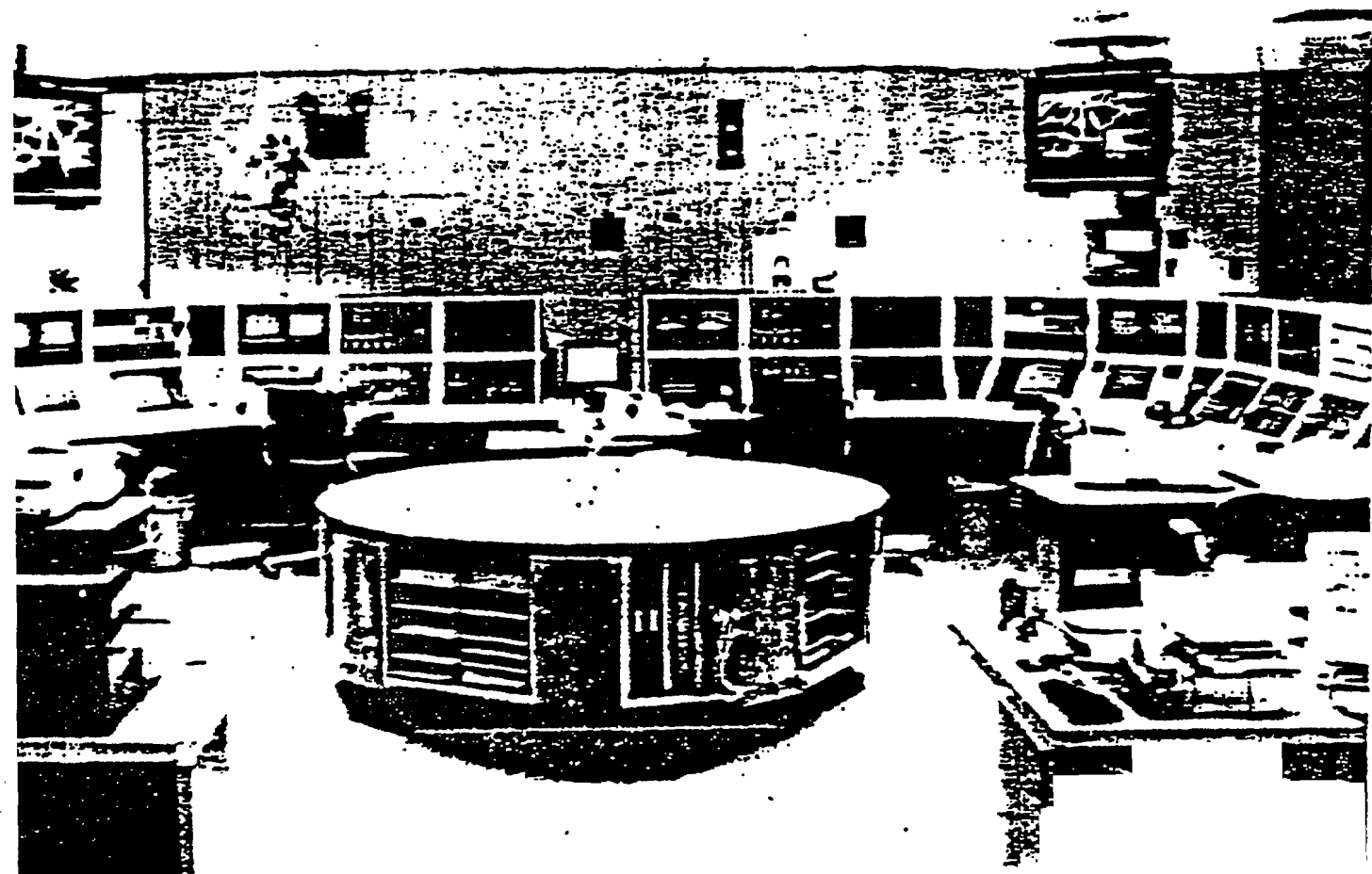
## **SECTION B**

### **TYPICAL COMMUNICATIONS CENTER**

THE  
COMMUNICATIONS  
CENTER



Illinois Department  
of Transportation



## THE COMMUNICATION CENTER

(district one)

The Communications Center (ComCenter) is one of the many important links which make up the chain of operating units of the Department of Transportation. The goal of the Department is to keep traffic on State-maintained roadways and interstates running as efficiently as possible. The ComCenter coordinates the assignment of emergency and maintenance vehicles and specialized crews to areas throughout the District as its part in achieving this goal. The lines of communication are always kept open and accessible, 24 hours per day, year round.

The ComCenter has been in existence for over 25 years. A sign displaying our motto hangs prominently on the centers wall. The signs legend is "Service is what the customer says it is!". Demanding customers, the citizens and employees of the State of Illinois, determine the extent and quality of our service. Millions of radio calls and tens of thousands of reports, AM broadcasts that are updated every five minutes, and countless personal touches stand as a testament to it.

The ComCenter is on the first floor just beyond the main lobby in the District One Department of Transportation building located at 201 Center Court in Schaumburg, Illinois. The personnel who operate the center are called Communication Specialists. On a regular basis, there are at least 2 to 6 Specialists on duty during the week from the morning rush period (6:00 AM until 9:00 PM) through to the afternoon/evening rush period (3:00 PM until 7:00 PM). The regular number of specialists on duty follows the ComCenter demands throughout the day and night, with only one specialist on duty for the midnight shift. The number of specialists on duty however, is increased to cover certain emergency situations caused by such factors as inclement weather, or a major incidents/accidents. Currently there are 10 full-time and 10 part-time specialists on the roster and they are coordinated by 4 supervising managers.

The Communications Center is the operations hub of the district with the primary responsibility of calling out the appropriate personnel and coordinating their actions by using up to the minute information from various agencies.

The Communications Specialists most important tools are the radio and telephone systems. The primary system being the operation of the Centers vast radio network with over 1,000 mobile radios, utilizing eleven (11) radio frequencies within the District, and over 3 million calls generated annually from this office. Equally important, he/she must be able to detect any radio or equipment malfunctions and take the proper steps to see that the problem is corrected. At the same time, the Specialist must be capable of handling telecommunications in addition to radio frequencies.

The telecommunications consist of public phone lines, various hot (direct) lines to different agencies (Chicago Police, Cook County, State Police, various news media, the Department's electrical maintenance contractor, the Minute Man headquarters in Chicago, and the Department's Traffic Systems Center computer complex in Oak Park, hot line to the IDOT Springfield ComCenter and the other for the Chicago Marshal line, which allows for easy access to emergency services within

calls range from citizen & Police inquired to the Communications Specialists making the necessary callouts to correct the various complaints and inquiries received through this office are:

- malfunctioning and/or damaged traffic signals
- malfunctioning and/or damaged overhead lights
- pot holes/ pavement buckles
- sign damage
- snow hazards
- flooded roadways/interstates
- stalled vehicles
- accidents with lane blockage and road closings
- barricade and other problems within construction zones
- routing and roadway information
- dead animals/debris removal
- hazardous materials
- ambulance calls
- emergency medical evacuations

To assist the Specialist in handling the number of telephone calls received in this office, the Communication Center has recently acquired a new special phone answering system called D.I.A.L. This new system is set up to automatically route most incoming calls coming to the ComCenter.

It directs and advises the caller to a selected number of routine services and information programmed directly into the system. If the caller is not satisfied with the selections available within the system, he/she still has the option of talking directly to an on duty ComSpecialist.

Communication Specialists use computers to remotely control pump station, highway lighting, the highway advisory radio network and Kennedy reversible lane controls & signs duties of the ComSpecialist and some of the services rendered as a result are:

- Programming and recording messages on the Highway Advisory Radio (HAR) network. This is a radio network that provides up-to-the-minute roadway congestion and incident information via roadside AM transmitters broadcasting on either 1610 kHz or 530 kHz, depending of the location.
- Monitoring the pump station alarm computer. Pump stations are small facilities with large water pumps inside. They are located at various low-lying locations within the District with their main function being the pumping of water from flooded roads during periods of heavy rain. Currently, there are 51 of these stations.

- Turning Expressway overhead lights on and off using the Communication Centers Highway Lighting computer. The Highway Lighting computer is programmed to automatically turn the lights off at dawn and on at dusk.
- Programming and changing messages on Changeable Message Signs located at twelve sites along the expressway.
- Faxing copies and receiving copies over the telecopier machine located in this office.
- Typing and processing the various reports generated from the operation of the Communication Center. There are over 1,000 report items processed through on a regular monthly basis.
- Hand logging all radio and telephone communications on special, specific log sheets/and report forms.
- Providing up-to-the-minute information concerning accidents, congestion limits and travel times via computerized data readouts to news networks and radio stations.
- Using a special electrical contractor computer for defining the jurisdictional responsibilities of State maintained signals, overhead lighting and pump station locations.



The I.D.O.T. District One Highway Advisory Radio Network is one of the most expensive public highway information systems in the country. Reports, written and broadcasted by ComSpecialist, as well as automated, computer voice traffic congestion and travel time reports are relayed to trasmitters and a "leaky" cable system, as well as one television cable system, from our Schaumburg complex.

The ComCenter has gone through various changes and transitions throughout the years. Future changes may include cars that would be able to let the driver know where the congestion is and what route to take to avoid it. The Communications Center could relay information to the motoring public through their on board computer. Another idea for the future would be computer aided dispatch systems that would allow the Specialist to enter a message with a location of an accident into a computer and it would relay it to the on board computer of the closest mobile.

With technology expanding at an excelled rate brings a great future to the Communications Center that will allow changing roles, increased communications and greater capabilities in your quest of easing traffic congestion.

# IDOT TAPS CELLULAR SAMARITANS

By Charles McLean

In August 1989, the Illinois Department of Transportation (IDOT) initiated a new emergency response service. For motorists with cellular telephones, the service allows them to obtain assistance for other drivers or themselves while traveling on Chicago area expressways. With area cellular phone ownership near 150,000 and growing, IDOT decided to ask these users to provide additional eyes to help monitor the expressways. The service augments the Emergency Traffic Patrol (Minutemen) and expressway traffic moving, improve motorist safety, and provide timely expressway traffic condition information.

Through and IDOT contract with Ameritech Mobile and Cellular One, the two Chicago Area cellular service providers agreed to provide free calls for cellular phone users to report expressway problems. By dialing \*999, the calls are routed to a dispatch center where the calls are received and the appropriate service agencies notified.

A review of the 52,860 calls handled for the period from August 1989 through February 1990 reveals the following experience:

- Though concerned that the public would perceive this project as a personal service to cellular phone users, IDOT found that 95 percent of the calls were the "Good Samaritan type, where callers reported incidents involving others.
- While the service attempted to limit calls to the IDOT and Tollway expressway systems, cellular users expanded their reporting surveillance to the adjacent arterial highways. Over 16 percent of the total calls were relayed to municipal enforcement agencies for follow-up action.
- IDOT Operations Manager, Charles McLean, reports that an unexpected benefit from this service is the number of reports on traffic signal malfunctions (791), debris in roadway (1,770), vehicle losing load (99), and live animal in roadway (56)—incidents that could have resulted in accidents.
- Encouraged by the free cellular phone link to government agencies, users have displayed a traffic safety responsibility by making 731 calls regarding suspected "driving under the influence" observations, which led to arrests when the other motorists could be apprehended. There were also 100 "fights in progress" and 185 "crimes in progress" incidents reported.

IDOT is pleased with the initial results of this cellular telephone link and is continuing evaluation of its cost in relation to the number and type of calls handled.

## CHICAGOLAND EXPRESSWAY CMS

The Illinois Department of Transportation operates a changeable message sign (CMS) system on the Chicago area expressway network. Installed at a cost of 1.85 million as part of the advance work for the two-year Dan Ryan Bridge Rehabilitation Project, the current system has been operational since early 1988. In general, the CMS system is used to provide dynamic traffic information to the expressway motorist to help improve traffic flow and increase safety. The signs are strategically located to increase safety. The signs are strategically located to give real-time advisories about downstream traffic conditions in advance of major decision points.

All thirteen signs comprising the system are the electromagnetically controlled reflective disk type. The typical display has three 20-character lines providing 18-inch high yellow message text on a black background. Using a personal computer and a polling technique, the displays are remotely controlled over leased telephone circuits from the Traffic Systems Center (TSC) in Oak Park. Remote control is also possible from the Communications Center at District One Headquarters in Schaumburg and allows hands-on use by dispatchers during weekends and overnight periods when necessary.

Traffic sensors embedded in the center lane at half-mile points provide the real-time expressway condition information. Lane occupancy data (in percent) is input to congestion algorithm running on the surveillance computer to the CMS computer (master controller) allows pre-determined messages.

Sign use encompasses a variety of situations, with the policy being to only display messages of a traffic related nature. Recurrent congestion accounts for the majority of sign use-location and extent of backups are normally reported. Roadwork, whether it's reconstruction, scheduled maintenance, or emergency repairs, produces a heavy demand for messages. During the '88-'89 Dan Ryan project, for example, signs advised about lane reductions and ramp closures due to the work, as well as provided early warnings of the start date and promotions for the use of alternate routes.

another major use is for alerts regarding incidents-accidents or stalls causing lane blockage or delay, particularly those which have necessitated detours from the expressway. In these uses, as with the others, message accuracy and timely updates are considered critical to preserving overall operational credibility. When quieter times prevail, the displays remain blank or carry site specific messages, such as, "reduced speed zone ahead" or lane drop advisories.

Plans are being developed to expand the existing operation by early 1992. Ten more signs will be added over the course of the upcoming multi-year Kennedy Expressway Rehabilitation Project.

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